

Environmental Protection Department  
CIBA-GEIGY Corporation  
Ardsley, New York 10502-2699  
Telephone 914 478 3131

CIBA-GEIGY *file*

114668

April 10, 1989

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
4/10/89

Mr. Eugene W. Pine  
Hydrogeologist and Project Officer  
Hazardous Sites Cleanup Program  
Bureau of Waste Management  
Department of Environmental Resources  
P. O. Box 2063  
Harrisburg, Pennsylvania 17120

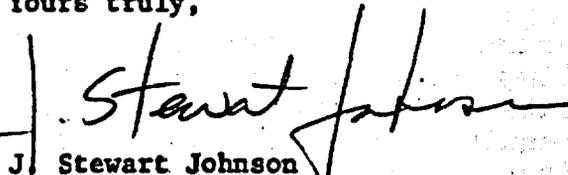
Re: Kimberton RI/FS Quarterly Sampling  
February 28 - March 2, 1989

Dear Gene:

Please find enclosed, Groundwater Technology Inc.'s (GTI) report of sampling and analysis results for the first Quarter of 1989, as defined in Section 6 of the Kimberton site's RI/FS work plan. The QA/QC validation reports for this sampling event will be sent to your attention upon receipt.

Should you have questions concerning the enclosed information, please give me a call at 914-478-3131, X-2028.

Yours truly,

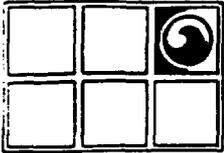


J. Stewart Johnson  
Manager, Environmental Protection

SK16:gg:16  
Enc.

P. Tan, USEPA ✓  
J. Doyle, Monsey

AR302110



# GROUNDWATER TECHNOLOGY, INC.

Chadds Ford West. Rt. 1, Chadds Ford, PA 19317 (215) 388-1460

Fax: (215) 388-6298

April 4, 1989

Mr. Stewart Johnson  
Ciba-Geigy Corporation  
444 South Mill River Road  
Ardsley, NY 10502

RE: Kimberton, Pennsylvania Groundwater Quality Laboratory  
Analytical Data

Dear Stewart:

Groundwater Technology, Inc. (GTI) field personnel conducted the fourth round of the quarterly groundwater quality sampling program during the period 28 February - 2 March 1989 in concurrence with the residential treatment system monitoring program for the Kimberton, PA site. Groundwater sampling points included wells 5, 8, 11, 13, 14, 18, 21, 23, 27, 32, and 34. The samples were collected and analyzed for Total Dissolved Solids, Chloride, and Volatiles (EPA Method 624).

Monitoring wells 5, 8, 14, 18, 21, 27, and 34 exhibited non-detectable levels of VOC's. Monitoring well 33 has been omitted from the quarterly groundwater quality sampling program with the confirmed absence of VOC's, in accordance with Table 6-2 (deep well sampling) of the PADER and USEPA approved Work Plan for the RIFS. Volatile organic compounds were detected in monitoring wells 11 (1985 ppb), 13 (1184 ppb), 23 (22 ppb), and 32 (440 ppb). These concentrations are consistent with previously reported total VOC concentrations for each of these wells.

Blind duplicate groundwater samples were taken from monitoring wells 8 and 32 during this sampling episode. The laboratory analytical data for these duplicate samples were consistent with the respective analytical results for each monitoring well (MW8 = non-detectable; MW8 duplicate = non-detectable; MW32 = 440 ppb; MW32 duplicate = 429 ppb). Matrix spike and matrix spike duplicate samples were taken from monitoring well 13. The laboratory analytical results for the spiked sample and duplicate spike sample are consistent with the exception of tetrachloroethene (PCE) concentrations. The PCE concentration reported for MW13 matrix spike was <50 ppb, with the detection limit at 50 ppb. The PCE concentration reported for MW13 matrix spike duplicate was 80 ppb. Total VOC concentrations for each of the field blank, trip blank, and laboratory method blank were non-detectable.

A summary tabulation of the laboratory analytical results is attached for your review. The laboratory analytical data have not been validated to date. QA/QC data validation reports will be forwarded to you upon completion.

The next round of the quarterly groundwater sampling program is tentatively scheduled to take place during the week of 15 May 1989, in concurrence with the residential treatment system monitoring program. Should you have any questions regarding the quarterly groundwater quality monitoring program, feel free to contact me at this office.

Sincerely,  
GROUNDWATER TECHNOLOGY, INC.



David N. Scotti  
Geologist

Enclosures

cc: J. Doyle  
B. Whitman  
B. Stonelake  
T. Maguire  
M. Wrigley  
S. Baggett  
Project File (300-703-8321)

AR302112



# GROUNDWATER TECHNOLOGY, INC.

CIBA - GEIGY  
 QUARTERLY GROUNDWATER QUALITY SAMPLING PROGRAM  
 KIMBERTON, PENNSYLVANIA  
 28 FEBRUARY - 2 MARCH 1989  
 4TH QUARTER

MONITORING WELLS SAMPLED	MW5	MW8	MW11	MW13	MW14	MW18	MW21	MW23	MW27	MW32	MW33#	MW34
pH	5.90	6.30	6.50	6.80	6.05	5.40	5.75	6.90	5.05	6.80	NA	5.50
TDS(mg/l)	140	100	290	240	450	80	350	630	130	200	NA	120
Chloride (mg/l)	12	6	42	29	125	5	74	130	17	15	NA	31
VOLATILE ORGANICS (ppb)												
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10
Vinyl Chloride	<10	<10	160	<10	<10	<10	<10	<10	<10	<10	NA	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10
Methylene Chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,1-Dichloroethene	<5	<5	15	14	<5	<5	<5	<5	<5	<5	NA	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Trans-1,2-Dichloroethene	<5	<5	980	590	<5	<5	<5	12	<5	360	NA	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Dichlorobromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Trans-1,3-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Trichloroethene	<5	<5	830	580	<5	<5	<5	10	<5	80	NA	<5
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Tetrachloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
Acrolin	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NA	<100
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NA	<100
Fluorotrichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5
TOTAL VOLATILES	ND	ND	1985	1184	ND	ND	ND	22	ND	440	NA	ND

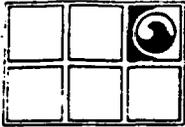
Volatile organic analyses per GC/MS (EPA Method 624)

ND - NON DETECTABLE

NA - NOT ANALYZED

# Monitoring well 33 omitted from the quarterly groundwater quality sampling program in accordance with the PADER and USEPA approved Work Plan for the RIFS.

AR302113



# GROUNDWATER TECHNOLOGY, INC.

CIBA - GEIGY  
 QUARTERLY GROUNDWATER QUALITY SAMPLING PROGRAM  
 KIMBERTON, PENNSYLVANIA  
 13-20 DECEMBER 1988  
 3RD QUARTER

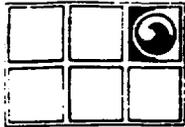
MONITORING WELLS SAMPLED	MW5	MW8	MW11	MW13	MW14	MW18	MW21	MW23	MW27	MW32	MW33	MW34
pH	7.25	6.45	6.80	7.20	6.00	6.50	6.75	5.70	6.05	5.95	10.35	5.45
TDS(mg/l)	170	130	260	250	460	70	320	340	150	200	630	110
Chloride (mg/l)	10	12	46	31	142	4	63	63	15	18	187	31
VOLATILE ORGANICS (ppb)												
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	36	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	160	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	<5	<5	13	13	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,2-Dichloroethene	<5	45	1300	730	<5	<5	<5	21	<5	470	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dichlorobromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	160	760	620	<5	<5	<5	15	<5	29	<5	<5
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrolin	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Fluorotrichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
TOTAL VOLATILES	ND	205	2269	1363	ND	ND	ND	36	ND	499	ND	ND

Volatile organic analyses per GC/MS (EPA Method 624)

ND - NON DETECTABLE

\* Monitoring well 33 is expected to be omitted from the quarterly groundwater quality sampling program with the confirmed absence of VOC's.

AR302114



# GROUNDWATER TECHNOLOGY, INC.

CIBA - GEIGY  
 QUARTERLY GROUNDWATER QUALITY SAMPLING PROGRAM  
 KIMBERTON, PENNSYLVANIA  
 20-27 SEPTEMBER 1988  
 2ND QUARTER

MONITORING WELLS SAMPLED	MW5	MW8	MW11	MW13	MW14	MW18	MW21	MW23	MW27	MW30#	MW32	MW33*	MW34**
pH	6.05	5.73	6.28	6.02	6.17	5.90	6.62	6.48	5.77	NA	5.97	7.51	5.37
TDS(mg/l)	120	160	310	220	500	80	450	390	200	NA	200	750	110
Chloride (mg/l)	12	6	45	32	150	3	69	65	8	NA	19	186	10
VOLATILE ORGANICS (ppb)													
Benzene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Toluene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Chlorobenzene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Ethylbenzene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	<10	<10
Vinyl Chloride	<10	<10	230	<10	<10	<10	<10	<10	<10	NA	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	<10	<10
Methylene Chloride	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,1-Dichloroethene	<5	<10	20	11	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,1-Dichloroethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
trans-1,2-Dichloroethene	<5	<10	1100	620	<10	<10	<10	20	<10	NA	380	<5	<10
Chloroform	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,2-Dichloroethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,1,1-Trichloroethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Carbon Tetrachloride	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Dichlorobromomethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,2-Dichloropropane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Trans-1,3-Dichloropropane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Trichloroethene	<5	<10	850	500	<10	<10	<10	10	<10	NA	230	<5	<10
Dibromochloromethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,1,2-Trichloroethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
cis-1,3-Dichloropropene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Bromoform	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
1,1,2,2-Tetrachloroethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Tetrachloroethene	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
Acrolien	<100	<100	<100	<100	<100	<100	<100	<100	<100	NA	<100	<100	<100
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	NA	<100	<100	<100
Fluorotrichloromethane	<5	<10	<10	<5	<10	<10	<10	<10	<10	NA	<5	<5	<10
TOTAL VOLATILES	ND	ND	2200	1131	ND	ND	ND	30	ND	NA	610	ND	ND

Volatile organic analyses per GC/MS (EPA Method 624)

ND - NON DETECTABLE

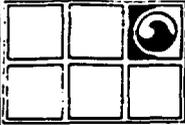
NA - NOT ANALYZED

# Monitoring well 30 omitted from the quarterly groundwater quality sampling program as per the PADER and USEPA approved Work Plan or the RIFS.

- Monitoring well 33 was installed in July, 1988 and is expected to be omitted from the quarterly groundwater quality sampling program with the confirmed absence of VOC's.

\*\* Monitoring well 34 was installed in July, 1988 and replaces well 28 in the quarterly groundwater quality sampling program to more accurately reflect an approximate perimeter of the established VOC plume.

AR302115



# GROUNDWATER TECHNOLOGY, INC.

CIBA - GEIGY  
 QUARTERLY GROUNDWATER QUALITY SAMPLING PROGRAM  
 KIMBERTON, PENNSYLVANIA  
 21 - 27 JUNE 1988  
 1ST QUARTER

MONITORING WELLS SAMPLED	MW5	MW8	MW11	MW13	MW14	MW16#	MW18	MW21	MW23	MW27	MW28*	MW30	MW32
pH	6.9	5.88	6.51	7.52	6.30	6.37	5.75	6.35	6.79	5.7	5.84	8.13	7.54
TDS(mg/l)	210	110	280	240	520	320	90	390	350	170	130	200	210
Chloride (mg/l)	9	16	46	28	54	38	2	71	58	11	20	41	17
<b>VOLATILE ORGANICS (ppb)</b>													
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethyl benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	230	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Propoethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
ethylene Chloride	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5
1,1-Dichloroethene	<5	<5	15	10	<5	13	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,2-Dichloroethene	<5	<5	1000	590	<5	600	<5	<5	23	<5	130	<5	390
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dichlorobromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	930	610	<5	730	<5	<5	17	<5	410	<5	330
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrolien	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Fluorotrichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
<b>TOTAL VOLATILES</b>	<b>ND</b>	<b>ND</b>	<b>2175</b>	<b>1210</b>	<b>ND</b>	<b>1343</b>	<b>ND</b>	<b>ND</b>	<b>40</b>	<b>ND</b>	<b>540</b>	<b>ND</b>	<b>720</b>

Volatile organic analyses per GC/MS (EPA Method 624)

ND = NON DETECTABLE

Monitoring well 16 is not part of the quarterly groundwater quality sampling program but was sampled for the analytical comparison with deep well 32.

\* Monitoring well 28 is to be subsequently replaced in the quarterly groundwater quality sampling program by monitoring well 34 so that the approximate perimeter of the VOC plume is more accurately defined.

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